Amendments to the Claims

This listing of claims replaces prior versions:

Claim 1 (currently amended): A combined engine for a single-stage spacecraft, comprising an air intake section, an engine main body section including a combustion chamber, and an exhaust nozzle section, in this order, ~~wherein~~ and comprising rocket engines that inject the engine exhaust flows as rocket jets into said combustion chamber are arranged on struts that partition said air intake section into a plurality of air introduction channels,

wherein controlling the chamber pressure in said rocket engines allows the shapes of said rocket jets injected from said rocket engines to be varied controlling the states of the airflow introduced into said combustion chamber, the combustion pressure in said combustion chamber and the state of the gas-flow exhausted from said combustion chamber without any mechanical variable structures to be able to stably produce thrusts at the wide ranges of flight speeds from take-off to orbiting earth with a single engine.

Claim 2 (original): The combined engine for a single-stage spacecraft according to claim 1, wherein said combustion chamber comprises a jet and airflow coexisting section in which both said rocket jets and airflows introduced through said air introduction channels are present, a mixing section in which said rocket jets and said airflows are mixed to form mixed gas, and a combustion section in which said mixed gas is burnt.

Claim 3 (original): The combined engine for a single-stage spacecraft according to claim 2, wherein each flow rate of said airflows is controlled by varying the air channel area of said airflow immediately upstream of said mixing section by varying the shape of said rocket jets.

Claim 4 (original): The combined engine for a single-stage spacecraft according to claim 2, wherein said air intake section comprises an equivalent function to a variable shape air intake section required for a Brayton cycle engine in supersonic or ultra-supersonic flight by varying the shape of said rocket jets.

Claim 5 (original): The combined engine for a single-stage spacecraft according to claim 2, wherein said mixing section and said combustion section have an equivalent function to a variable shape diffuser required for a Brayton cycle engine in supersonic or ultra-supersonic flight by varying the shape of said rocket jets.

Claim 6 (canceled)

Claim 7 (original): The combined engine for a single-stage spacecraft according to claim 5, wherein, the necessary combustion pressure is secured by controlling generation of oblique shock waves caused by development of boundary layers accompanying perspiration cooling in said mixing section and said combustion section.

Claim 8 (original): The combined engine for a single-stage spacecraft according to claim 2, wherein changing the combustion chamber pressure of said rocket engines changes the shape of said rocket jets.

Claim 9 (original): The combined engine for a single-stage spacecraft according to claim 2, wherein the air/fuel flow rate ratio in said mixing section is controlled by altering the equivalent ratio of oxidizer and fuel in the combustion chamber of said rocket engines.

Claim 10 (original): The combined engine for a single-stage spacecraft according to claim 2, wherein the exhaust gas of said rocket engines works as a huge flame holder simultaneously as a huge igniter for said air/fuel combustion chamber.

Claim 11 (original): The combined engine for a single-stage spacecraft according to claim 2, wherein said rocket jets generate Mach disks upstream of said mixing section in a subsonic or supersonic flight speed region.

Claim 12 (original): The combined engine for a single-stage spacecraft according to claim 1, wherein the engine performance required by the given fuselage design is secured by providing a number of said rocket engines that satisfies the thrust requirements from take-off from the runway up to Earth orbit.